	Application No.	**Applicant(s)**
Notice of Allowability	10/774,584	CHEN ET AL.
	Examiner	**Art Unit**	
	FARHAN M. SYED	2165	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *3/18/09*.

2. ☒ The allowed claim(s) is/are *33,34,39 and 41*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of
        Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *See Office Action* .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

/F. M. S./	/Neveen Abel-Jalil/
Examiner, Art Unit 2165	Supervisory Patent Examiner, Art Unit 2165

DETAILED ACTION

1.   Applicant's amendments and arguments filed on 20 April 2009 have been fully

considered and they are deemed to be persuasive.

Continued Examination Under 37 CFR 1.114

2.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 20 April

2009 has been entered.

EXAMINER'S AMENDMENT

3.   Authorization for Examiner's Amendment to the amendment filed 20 April 2009

was given by Ramraj Soudaranajan (Reg. No. 53,832) in a telephone interview on 11

June 2009.

4.   An examiner's amendment to the amendment filed 20 April 2009 appears below.

Should the changes and/or additions be unacceptable to applicant, an amendment may

be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment,

it MUST be submitted no later than the payment of the issue fee.

5.   The application has been amended as follows:

33. (Currently Amended)   An article of manufacture comprising having computer

readable ~~program code embodied therein which~~ **storage medium having instructions**

executable by a computer to ~~implementing~~ **implement** a method for compiling a

structured document schema into type annotation records, said ~~computer readable~~

~~program code comprising~~ **method implemented by**:

        a. ~~computer readable program code building~~ **executing instructions to build** a

type hierarchy ordered tree from structured document based on a derivation of relations

among types in said structured document and determining one or more tuples for each

type records in said structured document;

b. ~~computer readable program code forming~~ **executing instructions to form** a

complete typing set of said tuples;

c. ~~computer readable program code sorting~~ **executing instructions to sort** said

typing set by their first field;

d. ~~computer readable program code creating~~ **executing instructions to create**,

from sorted tuples in (c), ambiguity typing sequences for tuples having a common first

field and having a unique second field, ~~collecting and sorting~~ **collect and sort** a third

field from ambiguity type sequences, ~~assigning~~ **assign a** unique offset number to each

sorted third field, and ~~arranging~~ **arrange** said ambiguity typing sequences based on

offset numbers;

e. ~~computer readable program code~~ **executing instructions to create** a typing

array by concatenating typing tuples in resulting ambiguity typing sequences of (d);

f. ~~computer readable program code~~ for each type record, N, in created typing

array, if the intersection of a set of tuples in N with any ambiguity typing sequence is not

empty, then **executing instructions to replace** ~~replacing~~ first typing tuple in N by

typing tuple having offset, wherein offset represents a position of an ambiguity type in a

given ambiguity typing sequence;

g. ~~computer readable program code creating~~ **executing instructions to create** a

type indexing data, wherein entries in said type indexing data structure have a string

field denoting element type, a flag field denoting ambiguity type for each type name,

said flag field given a value of 'Y' is a corresponding element type in ambiguous and a

value of 'N' when corresponding element type is not ambiguous, and an index field

denoting a value corresponding to an index of an element type if corresponding flag

field is set to 'N or a value corresponding to a first index entry for an ambiguity

sequence if a corresponding flag field is set to 'Y', said type indexing data structure

being any of the following: hash table, binary tree, and B+ tree; and

  h. ~~computer readable program code writing~~ **executing instruction to write** said

created index structure to storage.

39. (Currently Amended) An article of manufacture comprising having computer

readable ~~program code embodied therein which implements a computer based method~~

~~for compiling~~ **storage medium having instructions executable by a computer to**

compile a structured document schema into type annotation records, said ~~computer~~

~~readable program code comprising~~ **method implemented by**:

  a. ~~computer readable program code building~~ **executing instructions to build** a

type hierarchy ordered tree from XML document schema based on a derivation of

relations among types in said structured document and determining one or more tuples

for each type records in said structured document;

  b. ~~computer readable program code forming~~ **executing instructions to form** a

complete typing set of said tuples;

  c. ~~computer readable program code sorting~~ **executing instructions to sort** said

typing set by their first field;

  d. ~~computer readable program code creating~~ **executing instructions to create**,

from sorted tuples in (c), ambiguity typing sequences for tuples having a common first

field and having a unique second field, ~~collecting and sorting~~ **collect and sort** a third

field from ambiguity type sequences, ~~assigning~~ **assign a** unique offset number to each

sorted third field, and ~~arranging~~ **arrange** said ambiguity typing sequences based on

offset numbers;

  e. ~~computer readable program code~~ **executing instructions to create** a typing

array by concatenating typing tuples in resulting ambiguity typing sequences of (d);

  f. ~~computer readable program code~~ for each type record, N, in created typing

array, if the intersection of a set of tuples in N with any ambiguity typing sequence is not

empty, then **executing instructions to replace** ~~replacing~~ first typing tuple in N by

typing tuple having offset, wherein offset represents a position of an ambiguity type in a

given ambiguity typing sequence;

  g. ~~computer readable program code creating~~ **executing instructions to create** a

type indexing data, wherein entries in said type indexing data structure have a string

field denoting element type, a flag field denoting ambiguity type for each type name,

said flag field given a value of 'Y' is a corresponding element type in ambiguous and a

value of 'N' when corresponding element type is not ambiguous, and an index field

denoting a value corresponding to an index of an element type if corresponding flag

field is set to 'N or a value corresponding to a first index entry for an ambiguity

sequence if a corresponding flag field is set to 'Y', said type indexing data structure

being any of the following: hash table, binary tree, and B+ tree; and

  h. ~~computer readable program code writing~~ **executing instruction to write** said

created index structure to storage.

Allowable Subject Matter

6.   Claims 33-34, 39, and 41 and renumbered 1-4 are allowed over the prior art of

record.

Reasons For Allowance

7.   The following is an examiner's statement of reasons for allowance:

Regarding independent claims 33 and 39, Applicants particular article of manufacture of

An article of manufacture comprising having computer readable storage medium having

instructions executable by a computer to compile a structured document schema into

type annotation records, said method implemented by: a. executing instructions to build

a type hierarchy ordered tree from XML document schema based on a derivation of

relations among types in said structured document and determining one or more tuples

for each type records in said structured document; b. executing instructions to form a

complete typing set of said tuples; c. executing instructions to sort said typing set by

their first field; d. executing instructions to create, from sorted tuples in (c), ambiguity

typing sequences for tuples having a common first field and having a unique second

field, collect and sort a third field from ambiguity type sequences, assign a unique offset

number to each sorted third field, and arrange said ambiguity typing sequences based

on offset numbers; e. executing instructions to create a typing array by concatenating

typing tuples in resulting ambiguity typing sequences of (d); f. for each type record, N, in

created typing array, if the intersection of a set of tuples in N with any ambiguity typing

sequence is not empty, then executing instructions to replace first typing tuple in N by

typing tuple having offset, wherein offset represents a position of an ambiguity type in a

given ambiguity typing sequence; g. executing instructions to create a type indexing

data, wherein entries in said type indexing data structure have a string field denoting

element type, a flag field denoting ambiguity type for each type name, said flag field

given a value of 'Y' is a corresponding element type in ambiguous and a value of 'N'

when corresponding element type is not ambiguous, and an index field denoting a value

corresponding to an index of an element type if corresponding flag field is set to 'N or a

value corresponding to a first index entry for an ambiguity sequence if a corresponding

flag field is set to 'Y', said type indexing data structure being any of the following: hash

table, binary tree, and B+ tree; and h. executing instruction to write said created index

structure to storage, was not disclosed by, would not have been obvious over, nor

would have been fairly suggested by the prior art of record.

The dependent claims, being further limiting to the independent claims, definite

and enabled by the specification are also allowed.

Any comments considered necessary by applicant must be submitted no later

than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on

Statement of Reasons for Allowance."

Contact Information

The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. See PTO-Form 892..

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Farhan M. Syed whose telephone number is 571-272-

7191. The examiner can normally be reached on 8:30AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Neveen Abel-Jalil can be reached on 571-272-4074. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

/F. M. S./
Examiner, Art Unit 2165

/Neveen Abel-Jalil/

Supervisory Patent Examiner, Art Unit 2165